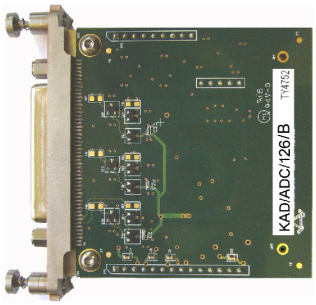
ACRA CONTROL

KAD/ADC/126

4-channel wideband S/E accelerometer (ICP) analog-to-digital converter with sig. conditioning



FEATURES

- Four accelerometer input channels with DC-reject
- Constant current source excitation per channel (3.6 mA typical)
- Simultaneous sampling 16-bit A/D for each channel
- Gain error of 0.1% FSR typical at 10kHz
- Programmable input range per channel
- 8th order Butterworth filter with programmable cutoff frequency per channel
- Up to 100,000 samples per second per channel
- Up to 25kHz bandwidth
- Enhanced mechanical strength between motherboard and daughterboard

APPLICATIONS

- Accelerometer signal conditioning and digitalization
- Suitable for ICP©, Isotron©, Piezotron© and Deltatron© sensors

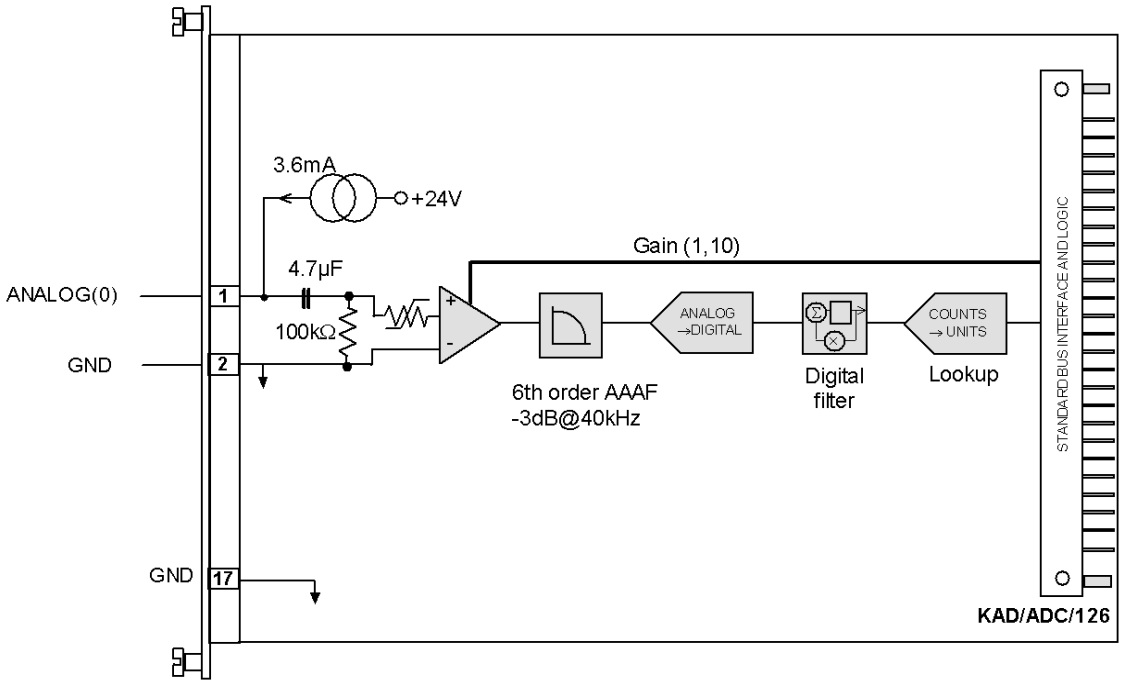
DESCRIPTION

The KAD/ADC/126 is used to condition and digitize up to four single ended (S/E) analog channels. All of these channels have a constant current source and high-pass (DC-reject) filter for use with integrated charge-amp piezoelectric (ICP) accelerometer devices.

At the heart of the KAD/ADC/126 is a hard-wired state machine that oversamples all channels at a rate between 200ksps and 400ksps and digitally filters any noise above the user-programmable cutoff frequency.

This is achieved using cascaded, half-band, finite-impulse-response (FIR) filters followed by an 8th order Butterworth IIR filter with a default cutoff point set at one quarter of the sampling frequency ($f_c=f_s/4$).

All signals are sampled simultaneously (isochronously). Thus, when several channels are sampled at different sampling rates, at the start of an acquisition cycle all channels will be aligned.



First of four accelerometer channels and first D/E channel on the KAD/ADC/126

Selection guide and ordering information

Selection Paths

Airborne Data Acquisition ⟶ KAM-500 ⟶ Modules ⟶ Analog ⟶ Accelerometer

Ordering Information

Part Number	Description
KAD/ADC/126	4-channel wideband S/E accelerometer (ICP) analog-to-digital converter with sig. conditioning

By default, the standard mating connector, CON/KAD/002/CP, is included with each module in the shipment. Its part number will be added to the Confirmation of Order unless an alternative option is specified (see the *Cables* data sheet).

Revision History

Revision	Differences	Status
KAD/ADC/126/B	Corrected an issue with signal distortion in slave chassis, or in chassis externally receiving X_Sync signals, or in chassis containing a KAD/BCU/105 receiving IEEE 1588 PTP	Recommended for new programs
KAD/ADC/126	First release	Not recommended for new programs

Related Products

Module	Details
KSM-500	This module is supported by the KSM-500 suite of software tools
ADC/116	12-ch. accelerometer A/D converter, with current excitation and signal conditioning

Related Documentation

Document	Details
TEC/NOT/017	Accuracy on KAM-500 modules
DOC/DBK/001	KAM-500 Databook
DOC/MAN/018	KSM-500 Databook
DOC/HBK/002	Environmental Qualification Handbook

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